



Manufacturing

PATHWAYS TO SUCCESS

A CAREER CLUSTER RESOURCE



Photo supplied by Vermeer Corporation (Pella, IA)



Photo supplied by A.Y. McDonald Mfg. Co. (Dubuque, IA)

What is a Career Cluster?

Career Clusters identify the knowledge and skills learners need as they follow a pathway toward their goals. The knowledge and skills identified form a strong basis for learner success, whether the learners are in high school, college, apprenticeship programs or in the workplace. (U.S. Department of Education definition)

How Do I Pursue Education and Training in Advanced Manufacturing in Iowa?

- There are thousands of educational and training opportunities within the highly skilled world of advanced manufacturing in Iowa.
- Learners need a solid background in applied mathematics, applied science and technical skills.
- Education and training can be obtained in high school, community colleges, four-year colleges/universities, apprenticeship programs and career technical schools/institutes.
- Apprenticeship programs prepare students for skills and knowledge while learning on the job.
- Colleges and universities build on previous learning, knowledge and skills to provide advanced degrees in this highly skilled world of advanced manufacturing.



Photo supplied by Vermeer Corporation (Pella, IA)



Advanced Manufacturing Career Paths

Engineering & Science

- Chemical Engineer
- Chemist
- Electrical Engineer
- Electronics Engineer
- Environmental Scientist
- Industrial Engineer
- Sales Engineer
- Mechanical Engineer
- Production Engineer

Technical & Skilled

- Biological Technician
- Chemical Technician
- Crane Operator
- Electronics Repairer
- Equipment Assembler
- Equipment Operator
- Environmental Technician
- Graphic Designer
- Inspector
- Logisticians
- Purchasing Agent
- System Operator
- Technical Writer

Semi-skilled & Unskilled

- Assemblers
- Model maker
- Production Worker
- Fabricator
- Fitter
- Molder, Shaper/Caster
- Machine Assembler
- Machine Feeder

Management & Supervision

- Machine Operator
- Team Assembler
- Packaging Machine
- Tool Grinder & Filer
- Engineering Manager
- Production Manager
- Purchasing Manager



Photo supplied by Pella Corporation (Pella, IA)



Photo supplied by Al-Jon Manufacturing (Ottumwa, IA)



What is the Future For Salaries and Growth in Advanced Manufacturing?

- Average growth projected for manufacturing positions in the future.
- The “Green” or environmental engineering and technician positions will be on a faster track especially in manufacturing (hybrid cars, lesser carbon footprint in building materials).
- As manufacturing plants move toward robotics or automation processes, some positions will grow slowly. Skills that cannot be automated such as welders, engineers, production managers will grow more quickly. Most manufacturing employers will pay for your education for these skill sets.
- With increased automation in production processes, job growth will be for those with broad skill sets such as in problem solving, critical thinking, and technology process improvement.
- Skill credentials such as post-secondary certificates and Associates Degrees or specialized certificates for safety or environmental compliance will be valuable for a potential job seeker. Most local manufacturers will pay for developing these skill credentials.
- Post-secondary credentials range from specialized skill or training certificates, and Associate Degrees from the community colleges.
- Engineering positions will require Baccalaureate and graduate college degrees—manufacturing businesses will need engineers and pay \$50,000 + for starting wage.
- Salaries range from \$22,000 for starting salaries up to \$60,000 for experienced workers with degrees.



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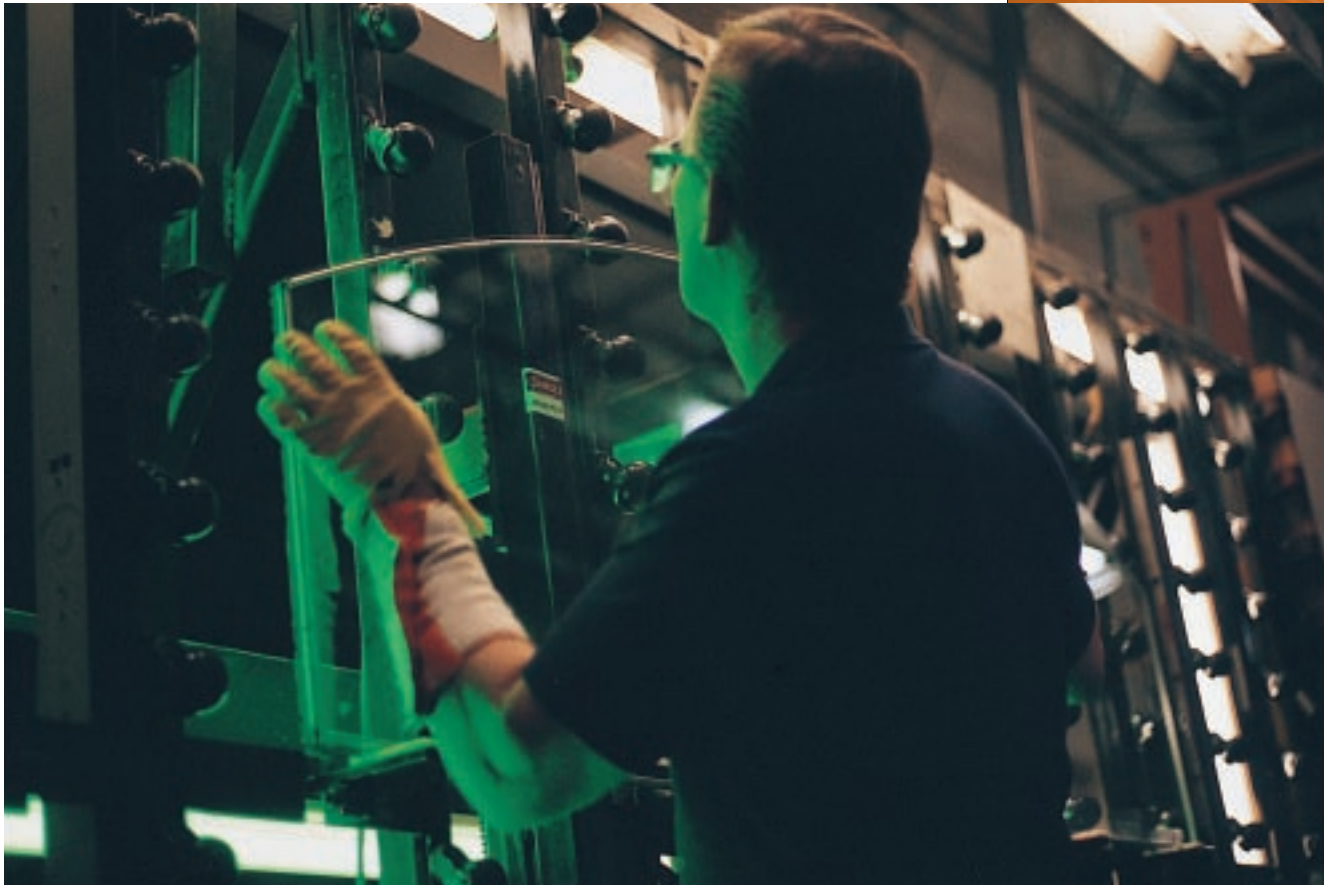


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Advanced Manufacturing Resources

www.ihaveaplaniowa.gov (Iowa's career planning resource)

www.nam.org (National Association of Manufacturers website)

www.bls.gov/oco/cg (US Department of Labor; Bureau of Labor Statistics website)

www.nacfam.org (National Council for Advanced Manufacturing website)

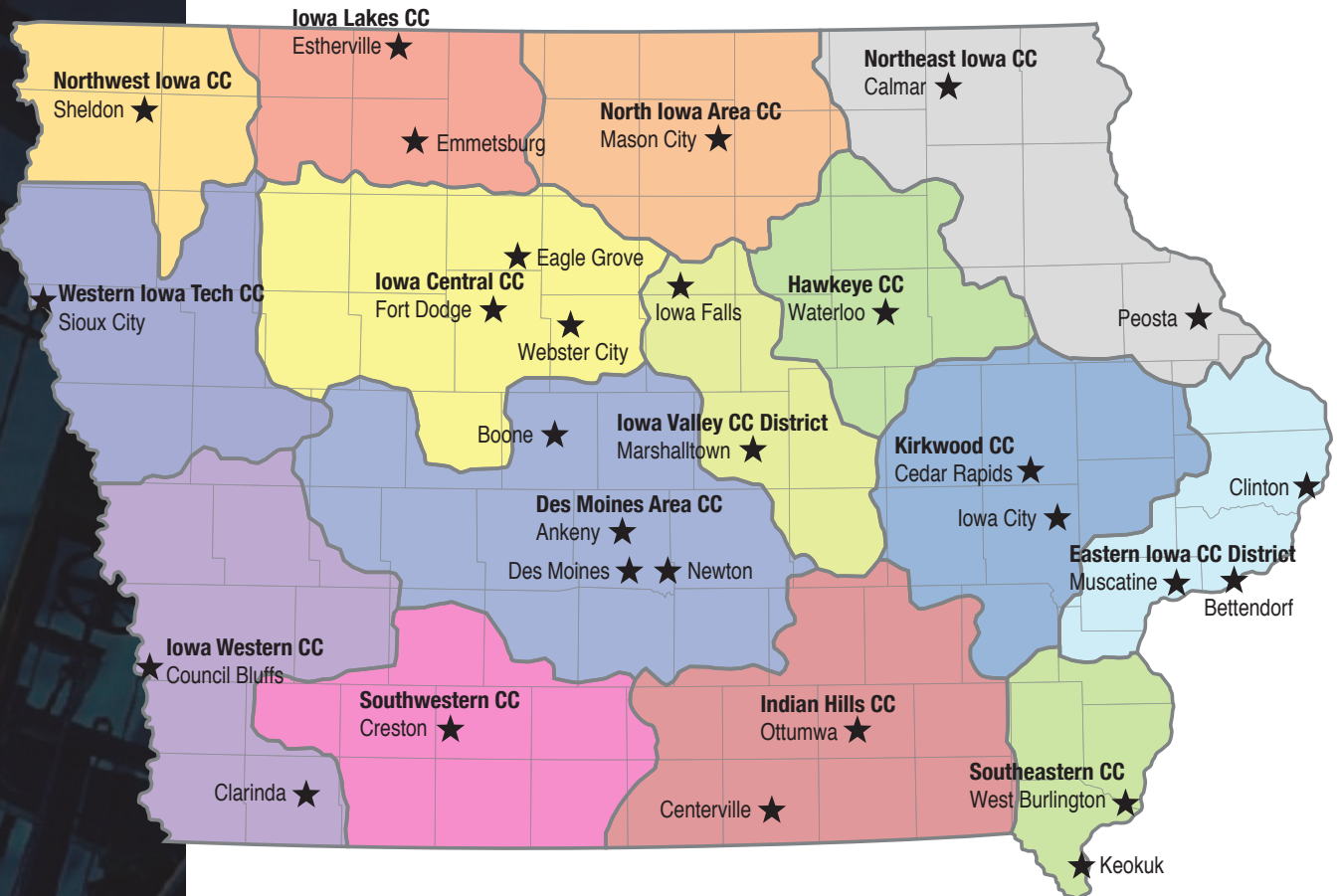
online.onetcenter.org (US Department of Labor O*Net)



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Manufacturing Programs in Iowa



Northeast Iowa Community College

Calmar, Iowa www.nicc.edu/
800.728.2256

North Iowa Area Community College

Mason City, Iowa www.niacc.cc.ia.us
888-466.4222

Iowa Lakes Community College

Estherville, Iowa www.iowalakes.edu/
800.521.5054

Northwest Iowa Community College

Sheldon, Iowa www.nwiccc.com/
800.352.4907

Iowa Central Community College

Fort Dodge, Iowa www.iowacentral.edu
800.362.2793

Iowa Valley Community College

Marshalltown, Iowa www.iavalley.cc.ia.us/mcc
866.622.4748

Hawkeye Community College

Waterloo, Iowa www.hawkeye.cc.ia.us
800.670.4769

Eastern Iowa Community College

Davenport, Iowa www.eicc.edu
800.462.3255

Kirkwood Community College

Cedar Rapids, Iowa www.kirkwood.edu
800.363.2220

Des Moines Area Community College

Des Moines, Iowa www.dmacc.edu
877.863.6222

Western Iowa Tech Community College

Sioux City, Iowa www.witcc.edu
800.352.4649

Iowa Western Community College

Council Bluffs, Iowa www.iwcc.edu
800.432.5852

Southwestern Community College

Creston, Iowa www.swcciowa.edu
800.247.4023

Indian Hills Community College

Ottumwa, Iowa www.indianhills.edu
800.726.2585

Southeastern Community College

West Burlington, Iowa www.scciaa.edu
866.722.4692



Manufacturing Programs in Iowa

MANUFACTURING PROGRAMS	IOWA COMMUNITY COLLEGES														
	Northeast Iowa CC	North Iowa Area CC	Iowa Lakes CC	Northwest Iowa CC	Iowa Central CC	Iowa Valley CC	Hawkeye CC	Eastern Iowa CC	Kirkwood CC	Des Moines Area CC	Western Iowa Tech CC	Iowa Western CC	Southwestern CC	Indian Hills CC	Southeastern CC
Electronics Engineering Technology	A	A		A	A	A	ACD	AD	AD	A	ACD	ACD		AD	A
Industrial Electronics Technology				A	A				AD	A				D	
Industrial Equipment Maintenance Technician					D	C	D	AC		AC	ACD			D	CD
Machine Tool Technician/Technology	A			CD	A	A	AD	AC	AD	A				A	AD
Manufacturing Technology	A					A	A	AC				A			A
Tool-and-Die Technology		AD		A		AD	A			AD					
Welding Technician/Technology	CD	D	D	CD	D		CD	ACD	AD	CD	CD		D	D	ACD
Bioprocessing Engineer/Ethanol Technology			A											A	
Telecommunications Technology									AD		AD				
Mechanical Drafting/CAD/CADD Technology or Architectural Drafting/CAD or Civil Drafting/CAD/CADD	D		A	A	AD		A	ACD	AD	AD	AD	A		AD	AD
							A	AC	AD	AD	A	A			
													AD		

CHART CODES:

A - ASSOCIATE DEGREE (2 year)

C - CERTIFICATE (Career/Technical Programs: less than 1 year)

D - DIPLOMA (Career/Technical Programs; 1 year)

Facts about Iowa Advanced Manufacturing

- Iowa is a community of world-class advanced manufacturing firms, many recognized for quality, efficiency and profitability.
- Iowa has the physical infrastructure to support the advanced manufacturing industries including an extensive road, rail and airport network that link Iowa businesses with the rest of the world, two of the nation's major river transportation systems, plus abundant energy and water capacity.
- Iowa's advanced manufacturing industry consists of more than 6,100 manufacturing firms with more than 6,580 physical plants with 237,051 jobs.
- Iowa is home to small and large firms in manufacturing with some of the large firms accounting for 68% percent of the state's manufacturing workers.
- Iowa's manufacturers stay in business a long time. 89 Iowa manufacturers have been in business for more than a century and another 359 have been in business for over 50 years. Advanced manufacturing is alive and strong in Iowa!



Photo supplied by Vermeer Corporation (Pella, IA)

- Data from CIRAS (Center for Industrial Research and Services), Ames, IA



Iowa Employers Tell Us Why Advanced Manufacturing is Important

"With manufacturing being one-tenth of all U.S. jobs, students have extensive job opportunity within the manufacturing sector. Students need to understand the required skills to take advantage of career opportunities within manufacturing, including science, technology, engineering, and mathematics, among others. When students have the right skills, it's good for their future, and for the future of manufacturing, and therefore, the future economy of Iowa and the United States."

-Mary Andringa, CEO & President, Vermeer Co., Pella, IA

"Manufacturing careers provide excellent benefits, advancement, and continuing educational opportunities for today's graduates. More new technology comes from this sector than any other. Every employee is involved in our planning process and participates in all aspects of new-product development and advanced-manufacturing techniques. Be part of the 15,000,000 people in America that make things."

- Kendig K. Kneen, President, Al-jon Manufacturing Co., Ottumwa, IA

"Iowa Manufacturing provides interesting and technical career opportunities that have come a long way from the stereotypical ideas of dirty jobs doing repetitive operations. Advancements in technology and streamlined processing have greatly enhanced the career possibilities in manufacturing. Computer Numerical Controlled (CNC) equipment, cell manufacturing, and electronic processing have taken monotonous jobs and turned them into highly skilled, technological, and fascinating job opportunities. Skilled manufacturing work is in high demand and provides a great career opportunity for students interested in the production and operations of manufacturing."

*- Sarah McDonald Hasken, Vice President & Corporate Secretary,
A.Y. McDonald Mfg. Co., Dubuque, IA*

"Careers in advanced manufacturing in Iowa are abundant and satisfying. These careers provide employees the opportunities to experience manufacturing in the 21st century; a clean, bright, technologically-advanced environment that provides challenge, accomplishments, and some of the best compensation and benefits in the Iowa workforce today."

- Michael Ralston, President, Iowa Association of Business & Industry, Des Moines, IA

FOR MORE INFORMATION, CONTACT US:

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